

National 4 Homework 13

Questions 1, 2, & 4 are Non Calculator

1. Calculate

a) $33 \cdot 7 - 20 \cdot 45 + 8 \cdot 2$

b) 5% of 24 litres

c) $14 - 2 \times 8$

d) $\frac{2}{9}$ of 148.5kg

e) $6234 \div 60$

f) $-3 - (-10) + (-7)$.

2. Factorise

a) $4x + 18$

b) $6y - 18z$

c) $16a + 24$

d) $12p - 20q$

3. Joe earns £12.10 an hour working for a plumbing company.

- a) How much will he earn in a week when he works Monday to Friday;
8am – 1.30pm?
- b) After being with the company for 6 months, they increase his wage by 15%.
How much **extra** will Joe earn for the same week's work?



4. In Physics the formula for Kinetic Energy is given by $E_k = \frac{1}{2}mv^2$ where m is the mass of the object in kg and v is the velocity of the object in m/s. A car is travelling at 10m/s and weighs 900kg. What is its kinetic energy (in Joules)?

5. Newhigh Academy pupils and staff are voting for new school colours. The results, given as a percentage, are shown below. If 1200 votes were cast, how many voted for the winning colours?

Colours	Purple & Navy	Green & Gold	Red & Black	Black and Orange
Percentage of Vote	25%	22%	47%	6%

6. Square towels are sold in two sizes, one with sides of 25cm and the other has sides of 40cm.

- a) Calculate the area of material needed for each towel.
- b) A new square towel is introduced in the range.
It has an area of 6400cm^2 .

What is the length of a side of this towel?

